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DUKE POWER

November 17, 1994

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Catawba Nuclear Station
Docket No. 50-414
LER 414/94-006

Gentlemen:

Attached is Licensee Event Report 414/94-006 concerning TECHNICAL SPECIFICATION 3.0.3 ENTERED DUE TO LESS THAN ADEQUATE WORK PRACTICES.

This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

D. L. Rehn

xc: Mr. S. D. Ebneter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Catawba Nuclear Station, Unit 1	05000 413	1 OF 6

TITLE (4)
Technical Specification 3.0.3 Entered Due To Inadequate Work Practices

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									CNS, Unit 2	05000 414
10	18	94	94	006	00	11	17	94	FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	1
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

20.402(b)		20.405(c)		50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)		50.36(c)(2)	X	50.73(a)(2)(vii)	OTHER
20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
D.P. Kimball, Safety Review Group Manager	(803)831-3743

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

ABSTRACT

On October 18, 1994, at 0438 hours, with Unit 1 and Unit 2 both in Mode 1, Power Operation, at 100 percent power, Operations tagged out Train B of the Control Room Ventilation and Chilled Water (VC/YC) System. At 0830 hours, Technical Specification 3.0.3 was unknowingly entered when maintenance opened access panels on B Train VC/YC to begin routine maintenance. Outward air flow through the open access panels as a result of an unsecured backdraft damper created a bypass leakage flowpath, causing the running VC/YC Train A to be inoperable in that it was not capable of adequately pressurizing the Control Room. The access panels were closed at 0940 hours and Technical Specification 3.0.3 was exited. This event is attributed to work practices, in that a Non-Licensed Operator chose an inappropriate tagged position for the backdraft damper during the development of a "preplan" tagout. Corrective actions include Operations' management review of key aspects of this event with all operators to ensure a clear understanding of their responsibilities when tasks cannot be completed as required.

REQUIRED NUMBER OF DIGITS/CHARACTERS
FOR EACH BLOCK

BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP TO 46	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 76	TITLE
5	6 TOTAL 2 PER BLOCK	EVENT DATE
6	7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER	LER NUMBER
7	6 TOTAL 2 PER BLOCK	REPORT DATE
8	UP TO 18 – FACILITY NAME 8 TOTAL – DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	1 CHECK BOX THAT APPLIES	REQUIREMENTS OF 10 CFR
12	UP TO 50 FOR NAME 14 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	6 TOTAL 2 PER BLOCK	EXPECTED SUBMISSION DATE

BACKGROUND

The Control Room Area Ventilation [EIIS:VI] (VC) and Chilled Water [EIIS:KM] (YC) Systems combine to form one system which is designed to maintain a suitable environment in the following plant areas at all times: Control Room [EIIS:NA](C/R), Cable [EIIS:CBL] Room, Battery [EIIS:BTRY] Rooms, Switchgear [EIIS:SWGR] Rooms, Motor Control Center [EIIS:MCC] (MCC) Rooms, and the Electrical Penetration [EIIS:PEN] Rooms at elevation 594 + 0. The VC/YC System is shared between both Units and consists of two 100% redundant trains of equipment. Each is capable of being powered by Unit 1 or Unit 2 Essential Auxiliary Power [EISS:EB], but under normal conditions both trains are aligned to Unit 1. Two Diesel Generators [EIIS:DG] (D/Gs) are provided per Unit to energize the Essential Auxiliary Power buses [EIIS:BU] during emergency conditions. The VC/YC System operates prior to, during and after a Loss of Coolant Accident (LOCA) or Blackout (B/O).

The portion of the VC/YC System serving the C/R includes two 100% capacity air handling units [EIIS:AHU](1CR-AHU-1 for Train A and 2CR-AHU-1 for Train B), and two 100% capacity outside air pressurizing filter [EIIS:FLT] trains (1CRA-PFT-1 for Train A and 2CRA-PFT-1 for Train B).

Since the AHU housings, PFT housings, and all ductwork [EIIS:DUCT] are an integral part of the Control Room pressure boundary, each train is equipped with dampers [EIIS:DMP] for sectional isolation for Preventative Maintenance (PM) or repairs. Following a Nuclear Station Modification, which removed the actuators from the dampers in the VC/YC System and converted the dampers to either manual isolation [EIIS:BDMP] or backdraft dampers [EIIS:UDMP], the means of ensuring that the dampers would remain closed during periods of maintenance was to manually secure them closed with an installed device designed specifically for that purpose.

Technical Specification (T/S) 3.7.6 specifies that two independent trains of VC/YC shall be operable during all operational modes. If one train becomes inoperable while either Unit is in Mode 4, Hot Shutdown, or above, the inoperable train must be restored to operability within seven days or be in at least Mode 3, Hot Standby, within the next six hours and in Mode 5, Cold Shutdown, within the following 30 hours. Surveillance 4.7.6.e.3 requires that at least once per 18 months the system demonstrates the ability to maintain the C/R at a positive pressure of greater than or equal to 1/8 in wc relative to adjacent areas.

T/S 3.0.3 is required to be entered when the Unit is operating in a condition prohibited by T/Ss. This condition exists when a Limiting Condition for Operation (LCO) is not met except as provided in the associated Action

Requirements. It requires that within one hour action shall be initiated to place the Unit in a Mode in which the specification does not apply by placing it, as applicable, in:

a) At least Hot Standby in the next 6 hours,
b) At least Hot Shutdown within the following 6 hours, and
c) At least Cold Shutdown within the subsequent 24 hours.

EVENT DESCRIPTION

On October 18, 1994, at 0438 hours, with both Unit 1 and Unit 2 in Mode 1, Power Operation, at 100% power, Operations made out tags for "B" Train of the VC/YC System using a "preplan tagout" for preventative maintenance. "B" Train was declared inoperable and entered into the "Technical Specification Action Item Log" (T-SAIL).

At 0512 hours, a Non-Licensed Operator (NLO) proceeded to place the tags. He found manual dampers 2CRA-D-1 and 2CR-D-4 open and each held in place with its respective securing device. He closed each damper, and secured the positioning handle with its securing device. He found backdraft damper 2CR-D-10 closed since no fan was running in that train. He noted that there was a securing device attached to a chain near the position indicating handle. Since the tagout did not specify, he did not secure the position indicating handle in the closed position.

At 0830 hours, Technical Specification 3.0.3 was unknowingly entered when maintenance opened the access panels on "B" Train VC/YC for belt and filter inspection per Work Order 94075617-01. Outward air flow through the open access panels as a result of an unsecured backdraft damper created a bypass leakage flowpath, causing the running "A" Train of VC/YC to be inoperable in that it was not capable of adequately pressurizing the Control Room. From experience, the maintenance team felt that the air flow was more than they expected, so they proceeded to contact the Systems Engineer. Since the air flow did not inhibit work, they continued with scheduled activities.

At 0940 hours, a member of the maintenance team, who had exited the work area, met with the Mechnical Systems Engineer and after discussion, the maintenance team member indicated he would

ensure that the access panels were closed. When he contacted the team, panel closure was in progress. This made the "A" Train of VC/YC operable and Technical Specification 3.0.3 was exited for both units.

At 1015 hours, when the Mechnical Systems Engineer arrived at the work site on "B" Train VC/YC, he verified the access panels had been closed. Closure of the access panels re-established the normal boundary of the VC/YC System. The Mechnical Systems Engineer found backdraft damper 2CR-D-10 in the closed position, but not secured. The maintenance team was told not to resume work activities that required access to the ductwork until the damper could be secured in the closed position.

At 1149 hours, the Mechnical System Engineer and an NLO secured closed 2CR-D-10.

At 1210 hours, immediately upon reopening the access panels, OP/0/A/6450/11, CONTROL ROOM VENTILATION/CHILLED WATER SYSTEM, Enclosure 4.11, Control Room D/P Verification, was successfully performed, ensuring operability of "A" Train VC/YC. The maintenance team then resumed work inside the "B" Train VC/YC ductwork.

On October 19, 1994, at 0132 hours, with all work on the "B" Train of VC/YC completed, the train was declared operable and removed from the T-SAIL.

CONCLUSION

This event is attributed to less than adequate work practices, in that an NLO in the Operations' Support Group who initially developed the "preplan tagout" selected an inappropriate tagged position for the dampers. Preplan tagouts are computer generated, and as such the tagged positions are selected from a "pick list". Of the selections that were available at the time, "closed" and "locked closed" were the two options from the list that most nearly fit the desired tagged position of "secured closed". "Closed" was chosen because the NLO felt that "locked closed" implied that a padlock would be required. The NLO did not take appropriate action to ensure that the proper tagged position was listed on the preplan tagout. Operations' management will review the key aspects of this event with all operators to ensure a clear understanding of their responsibilities when tasks cannot be completed as required.

A review of reportable events which have occurred during the 24 months prior to this event indicated that entry into Technical Specification 3.0.3 due to both trains of VC/YC being inoperable is a recurring problem. Licensee Event Reports (LERs) 413/92-013 and 413/93-001 involved equipment

failure. LER 413/93-009 involved a failure to apply self-checking to ensure the correct component in that a technician cut the wrong wire after first identifying the correct one. The specific causes for these events are not applicable to this event.

A review of reportable events which have occurred during the 24 months prior to this event for which work practices was the cause, indicated three LERs attributed to work practices.
LER 414/92-005 involved a failure to apply self-checking in that an operator misread a value from the Operator Aid Computer resulting in a Mode change with Containment temperature below the temperature required for the Mode entered.
LER 414/93-003 involved a failure to adequately perform independent verification in that two technicians working on a sump pump circuit opened a link in the wrong cabinet after identifying the link by the correct number.
LER 413/93-009 involved a failure to apply self-checking to ensure the correct component in that a technician cut the wrong wire after first identifying the correct one.

Even though the causes cited in the above LERs were attributed to work practices, the specific nature of the causes and contributing factors are not applicable to this event. The work practice of selecting an inappropriate tagging position for Removal and Restoration preplan tagouts is not a recurring problem.

IMMEDIATE CORRECTIVE ACTIONS

1) The opened access panels were closed and work was stopped that involved access to the ductwork until the damper could be secured.

2) The damper 2CR-D-10 was secured closed.

SUBSEQUENT CORRECTIVE ACTIONS

1) The tagging program's "pick list" has been revised to include "secured closed" as a possible selection for tagged position.

2) Preplan tagouts for the VC/YC trains have been revised to require that the dampers be "secured closed".

PLANNED CORRECTIVE ACTIONS

1) Operations' management will review the key aspects of this event with all operators to ensure a clear understanding of their responsibilities when tasks cannot be completed as required.

SAFETY ANALYSIS

During the time period from 0830 to 0940, 2CR-AHU-1 was opened for filter PM's without damper 2CR-D-10 secured closed. In this alignment it is unlikely the Control Room would be pressurized to greater than 1/8 in wc with the Pressurizing Filter Train running, due to the amount of flow escaping through the open AHU panels. Therefore, T/S 3.0.3 was unknowingly entered due to two inoperable trains of VC/YC. However, the time period for this T/S 3.0.3 event is less than the time allowed in the ACTION for T/S 3.0.3 which allows for one hour to fix the problem then six to shutdown.

Due to the construction of the Control Room at Catawba it is not likely that being pressurized to less than 1/8 in wc would significantly affect Operator Dose. The Control Room is required to be pressurized to minimize the amount of unfiltered inleakage entering the Control Room. The 1/8 in wc is required to compensate for wind and thermal effects along the Control Room pressure boundary which could locally affect inleakage. At Catawba only a small section of the Control Room west wall is exposed to the wind and this is solid concrete with no penetrations. Therefore, wind is an insignificant contributor to Control Room inleakage. Furthermore, of the areas adjacent to the Control Room all the areas normally receive some HVAC and therefore are not thermally stratified to any significant degree because of the mixing action of the HVAC systems. Additionally, because of the relatively small height of the Control Room, thermal column effects are minimal.

An analysis of Control Room pressures during an accident assuming the conditions of this event shows that a slight positive pressure will exist with respect to all adjacent areas except those across the Auxiliary Building "AA" wall (Operator Aid Computer Room, Service Building and outside). The Control Room will be very slightly negative with respect to these areas. This wall and the two doors in it by nature of their construction are very low leakage. The amount of unfiltered inleakage caused by this slight differential pressure would be much less than the 10 cfm currently assumed in the FSAR dose analysis. Control Room Operator dose would not exceed those stated in the FSAR dose analysis.

The health and safety of the Operators in the Control Room and of the public were not affected by this incident.